

## ABSTRACT

A semiconductor wafer processing system including a multi-chamber module having vertically-stacked semiconductor wafer process chambers and a loadlock chamber dedicated to each semiconductor wafer process chamber. Each process chamber includes a chuck for holding a wafer during wafer processing. The multi-chamber modules may be oriented in a linear array. The system further includes an apparatus having a dual-wafer single-axis transfer arm including a monolithic arm pivotally mounted within said loadlock chamber about a single pivot axis. The apparatus is adapted to carry two wafers, one unprocessed and one processed, simultaneously between the loadlock chamber and the process chamber. A method utilizing the disclosed system is also provided.

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